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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,049	01/16/2004	Christopher P. R.. Hill	118285	6135

25944 7590 06/27/2005

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P.O. BOX 19928  
ALEXANDRIA, VA 22320

EXAMINER
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ADDISU, SARA

ART UNIT	PAPER NUMBER
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3722

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/758,049

Applicant(s)

HILL ET AL.

Examiner

Sara Addisu

Art Unit

3722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/16/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. This claim is an omnibus type claim.

Claims 13 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Wormley et al. (U.S. 5,193,314).

Wormley et al. teaches method of producing from a workpiece, a finished disc for a gas turbine engine where the forged workpiece (44) has a base (hub) portion (48) and a blade (disc) portion (46) extending radially outwardly from the hub portion. Hub portion

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of the workpiece is supported in a machine tool by means of the support surface (see figures 5 & 8 and Col. 1, lines 25-26). Wormley et al. also teaches workpiece (44) being supported such that there is tool access to both axial faces of the disc portion and the outer periphery is not constrained. Furthermore, Wormley et al. teaches workpiece (44) being rotated around axis B therefore the sequence of machining operations is performed alternately on opposite sides of the disc portion while being supported by a cylindrical support surface (that is internal of the base/hub portion (48)) which is aligned with a longitudinal axis (Y) of the workpiece (see figure 8). Wormley et al. also teaches one end of the workpiece being supported by a fixture which is non rotationally supported by the support surface while the opposite end of the workpiece being supported by a tail-piece (60) (Col. 7, lines 4-6). Additionally, Wormley et al. teaches finishing machining operation using an abrading tool being done after rough and semi finish machining operations ('314, Col. 1, lines 41-47 & Col.2, lines 19-20).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

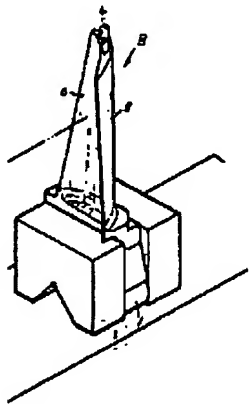
Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wormley et al. (U.S. 5,193,314), in view of Hashiramoto (JP 59001125A).

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Wormley et al. teaches method of producing from a workpiece, a finished disc for a gas turbine engine as set forth in the above rejection.

However, Wormley et al. fails to teach a support surface that is an external surface of the hub portion.

Hashiramoto teaches workpiece being held by an external support surface (see figure below or Fig 2 & 3).



Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize an external support surface to support the hub portion of the Wormley et al.'s workpiece as taught by Hashiramoto since it is well known in the art to secure a workpiece on the external surface for machining operations.

Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wormley et al. (U.S. 5,193,314), in view of Smith et al. (U.S. Pub. No. 2003/0163212).

Wormley et al. teaches method of producing from a workpiece, a finished disc for a gas turbine engine as set forth in the above rejection.

However, Wormley et al. fails to teach delay between machining operations such that distortion resulting from the preceding machining operation has taken effect.

Wormley et al. also fails to teach regions of the workpiece in which there is high residual stress being removed in machining operations early in the sequence of machining.

Smith et al. teaches methods and systems for manufacturing parts which meet specific characteristics and qualities (Page 1, paragraph 2). Smith et al. also teaches sequence of machining features/process path and production settings to produce a part using machine and tooling from a raw material. Furthermore, Smith et al. teaches sequence of machining features/process path that minimizes distortion from residual stress, not touching previously machined thin surfaces (i.e. delay between machining operations), alternating cuts on both sides, supporting workpiece only at opposite sides..etc. (Page 5, paragraph 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made for Wormley et al. to utilize the sequence of machining features/process path taught by Smith et al. to produce a part (i.e. turbine blade) from a raw material/workpiece for the purpose of efficiently producing a part with minimum distortion, by applying an improved method that employs optimal machine and tooling combination as well as an efficient production process (2003/0163212, Page 2, paragraph 23, lines 1-3).

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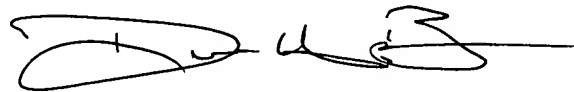
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on (571) 272-4419. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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